LIST OF CONTENTS

NUMBER 1

A. Dadone and **B. Grossman**	1	Progressive optimization of inverse fluid dynamic design problems
C. D. Pruett, C.-L. Chang and **C. L. Streett**	33	Simulation of crossflow instability on a supersonic highly swept wing
Y. Ventikos and **G. Tzabiras**	63	A numerical method for the simulation of steady and unsteady cavitating flows
C. Debiez and **A. Dervieux**	89	Mixed-element-volume MUSCL methods with weak viscosity for steady and unsteady flow calculations

NUMBER 2

I. Mary, P. Sagaut and **M. Deville**	119	An algorithm for low Mach number unsteady flows
H. Xu and **C. Zhang**	149	Numerical calculations of laminar flows using contravariant velocity fluxes
W. Khier, M. Breuer and **F. Durst**	179	Flow structure around trains under side wind conditions: a numerical study
F. Z. Sierra-Espinosa, C. J. Bates and **T. O'Doherty**	197	Turbulent flow in a 90° pipe junction Part 1: Decay of fluctuations upstream the flow bifurcation
F. Z. Sierra-Espinosa, C. J. Bates and **T. O'Doherty**	215	Turbulent flow in a 90° pipe junction Part 2: Reverse flow at the branch exit
	I	Announcement

NUMBER 3

A. Vardy and **Z. Pan**	235	Wave paths in transient polytropic flow
B. A. K. Abu-Hijeh	261	Modifying a reattaching shear layer using a rotating cylinder
W. W. Liou, G. Huang and **T.-H. Shih**	275	Turbulence model assessment for shock wave/turbulent boundary-layer interaction in transonic and supersonic flows
R. Hinkelmann and **W. Zielke**	301	Parallelization of a Lagrange–Euler-model for three-dimensional free surface flow and transport processes
M. R. Malik and **C.-L. Chang**	327	Nonparallel and nonlinear stability of supersonic jet flow

NUMBER 4

Special Issue

Selected Papers from the Computational Techniques and Applications Conference
Adelaide, Australia, September–October 1997

Guest Editor:
A. W. Gill

A. W. Gill	367	Preface
K. M. Smith, M. R. Davidson and **N. J. Lawson**	369	Dispersion of neutrally buoyant solids falling vertically into stationary liquid and horizontal channel flow
B. J. Noye	385	Explicit finite difference methods for variable velocity advection in the presence of a source
Y. M. Stokes	401	Numerical design tools for thermal replication of optical-quality surfaces
X. Wang and **L. Cheng**	415	Three-dimensional simulation of a side discharge into a cross channel flow
J. Roumeliotis and **G. R. Fulford**	435	Droplet interactions in creeping flow
K. R. Reddy, R. Toffoletto and **K. R. W. Jones**	451	Numerical simulation of ship airwake

NUMBER 5

T. P. Chiang, T. W. H. Sheu and **S. K. Wang**	467	Side wall effects on the structure of laminar flow over a plane-symmetric sudden expansion
D. C. Haworth and **K. Jansen**	493	Large-eddy simulation on unstructured deforming meshes: towards reciprocating IC engines
J.-L. Guermond and **H. Z. Lu**	525	A domain decomposition method for simulating advection dominated, external incompressible viscous flows
H. Juárez, R. Scott, R. Metcalfe and **B. Bagheri**	547	Direct simulation of freely rotating cylinders in viscous flows by high-order finite element methods
Technical note		
E. Schreck and **M. Schäfer**	583	Numerical study of bifurcation in three-dimensional sudden channel expansions

NUMBER 6

I. S. Men'shov and **Y. Nakamura**	595	On implicit Godunov's method with exactly linearized numerical flux

C. Pozrikidis	617	Effect of pressure gradient on viscous shear flow past an axisymmetric depression or protuberance on a plane wall
S. Lee	639	A numerical study of the unsteady wake behind a sphere in a uniform flow at moderate Reynolds numbers
A. K. Saha, K. Muralidhar and **G. Biswas**	669	Vortex structures and kinetic energy budget in two-dimensional flow past a square cylinder
J. R. Buchanan Jr., C. Kleinstreuer and **J. K. Comer**	695	Rheological effects on pulsatile hemodynamics in a stenosed tube

NUMBER 7

Y. Lian and **K. Xu**	725	A gas-kinetic scheme for reactive flows
X. K. Li, A. R. Davies and **T. N. Phillips**	749	A transient thermal analysis for dynamically loaded bearings
Y.-M. Koh	791	On boundary conditions and numerical methods for the unsteady incompressible Navier–Stokes equations
T. Buffard, T. Gallouët and **J.-M. Hérard**	813	A sequel to a rough Godunov scheme: application to real gases

NUMBER 8

Robert F. Kunz, David A. Boger, David R. Stinebring, Thomas S. Chyczewski, Jules W. Lindau, Howard J. Gibeling, Sankaran Venkateswaran and **T. R. Govindan**	849	A preconditioned Navier–Stokes method for two-phase flows with application to cavitation prediction
Trong T. Bui	877	A parallel, finite-volume algorithm for large-eddy simulation of turbulent flows
Hua-Zhong Tang and **Hua-Mo Wu**	917	Kinetic flux vector splitting for radiation hydrodynamical equations
Ahmet Pinarbasi	935	Formulation and computational issues for stability of two-layer inelastic fluids
P. Garcia-Navarro and **M. E. Vazquez-Cendon**	951	On numerical treatment of the source terms in the shallow water equations